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TITLE: Method for forming isolation layer of semiconductor device

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ABSTRACTED-PUB-NO: KR2001008560A

BASIC-ABSTRACT:

NOVELTY - A method for forming an isolation layer of a semiconductor device is provided to restrain the generation of a leakage current in a junction region caused by defective substances produced during a formation of a trench for the isolation layer.

DETAILED DESCRIPTION - After a pad oxide layer(30) and a pad nitride layer(40) are formed on a semiconductor substrate(20) in sequence, a trench is formed to some depth in the substrate(20). Here, defective substances are produced along inner surfaces in the trench, and further, **compressive stress** is applied to the inner surfaces. After the trench is cleaned, a thin film(50) for anti-defect is stacked on the inner surfaces in the trench. Here, the **compressive stress** is turned into **tensile stress**, and the defective substances are strongly trapped toward the interface of the thin film(50). The thin film(50) is then oxidized by a thermal oxidation process. Also, silicon in the substrate(20) near the interface of the thin film(50) is oxidized with some thickness by the subsequent thermal oxidation process to form a thermal oxidation layer(90). Thereafter, an oxide layer is filled in the trench and then polished to form an isolation layer(110).

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DRAWING:

TITLE-TERMS: METHOD FORMING ISOLATE LAYER
SEMICONDUCTOR DEVICE

DERWENT-CLASS: U11

EPI-CODES: U11-C08A2;

